REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-8 and 11-19 are presently active; Claims 20-49 have been withdrawn by a Restriction Requirement; Claims 9 and 10 have been canceled previously without prejudice;

In the final Office Action, Claims 1-3, 5-7 and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,882,424 to Taylor et al in view of Japanese Kokai 06-243992 to Deguchi et al, Claims 4, 8, and 13-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al in view of Deguchi et al as applied to Claims 1 and 5 above, and further in view of U.S. Patent Application Publication 2003/0151372 to Tsuchiya et al, Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al in view of Deguchi et al as applied to Claim 11 above, and further in view of U.S. Patent No. 5,441,596 to Nulty, Claims 1-8, 11 and 13-19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication 08-031753 to Tashiro et al in view of U.S. Patent Application Publication 2003/0151372 to Tsuchiya et al and Deguchi et al, Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Tashiro et al in view of Tsuchiya et al and Deguchi et al as applied to Claim 11 above and further in view of Nulty.

Claim 1 defines a method of operating a plasma processing system, comprising:

> positioning a substrate on a substrate holder in a processing chamber;
> initializing the plasma processing system;
> igniting a plasma by applying to a first electrode in the processing chamber a first RF signal at a first RF frequency from a first RF source to ignite the plasma and thereafter providing to the first electrode from the first RF source a second RF signal at a second RF frequency so as to maintain the plasma while the first RF frequency of the RF source is being changed to the second RF frequency of the first RF source, ***wherein the first RF frequency is higher in frequency than the second RF frequency***; and
> sustaining the plasma using the second signal applied to the first electrode at the second RF frequency,
> ***wherein said igniting and sustaining the plasma comprises:***

> ***supplying both the first RF signal and the second RF signal through a matching network having only one variable impedance element***. [Emphasis added.]

The added feature of supplying both the first RF signal and the second RF signal through a matching network having only one variable impedance element is a feature for which the examiner relies on newly applied Deguchi et al.

Regarding the art rejection of Claim 1 based on Taylor et al and Deguchi et al, the Office Action applies Deguchi et al for an asserted teaching of supplying both the first RF signal and the second RF signal through a matching network having only one variable impedance element. The Office Action on page 3 acknowledges that Taylor et al do not expressly teach this feature. The Office Action specifically relies on Deguchi et al numbered paragraphs [0013] – [0016] of the supplied English translation for such a teaching.

Yet, in consideration of the applicability of Deguchi et al, Applicants submit that no consideration was given to the defined condition that the plasma was ignited at a first frequency and then maintained a second frequency, with the first frequency for ignition being higher in frequency than the second frequency. Thus, the supplying both the first RF signal and the second RF signal through a matching network having only one variable impedance element in Claim 1 supplies the first higher RF signal (for plasma ignition) and the second lower RF signal (for maintaining plasma) through a matching network having only one variable impedance element.

Deguchi et al make clear in numbered paragraphs [0011] and [0016] - [0017] that the adjustment of oscillation frequency is an integral part of the matching which occurs much faster than the mechanical driving of a variable capacity adjustment. Thus, in Deguchi et al, variable capacitor 22 and the frequency changing are used interdependently to provide an

appropriate match between the plasma load and the rf power source. However, there is no way to know if the variable frequency supply in Deguchi et al will accommodate plasma initiation at one frequency and maintenance of the plasma at a second frequency lower than the first frequency. Indeed, the adjustment of the impedance in Deguchi et al by the "frequency conversions" described in numbered paragraph [0011] may well take the plasma maintenance frequency to a higher (not lower) frequency.

M.P.E.P. § 2143.03 requires that all words in a claim must be considered in judging the patentability of the claim against the prior art. Yet, there is no way to know which way the frequency matching in the single variable impedance matching network of Deguchi et al would have changed when applied to a condition for plasma initiation and then changed for plasma maintenance. Accordingly, the examiner has not established that the application of the single variable impedance matching network of Deguchi et al to the plasma system of Taylor et al would meet all the claim elements. Indeed, such an application may well result in the changing of frequency from lower to higher for plasma initiation to plasma maintenance, and **not** higher to lower as claimed.

Applicants' position on this matter appears to be corroborated by the example given in Deguchi et al at numbered paragraph [0023] where the frequency is changed from 13 to 14 MHz and appears to be corroborated by Figure 3 of Deguchi et al which shows a frequency arrow from 13 to 14 MHz. The essential point is that there is no way to know that the combination of the single variable impedance matching network of Deguchi et al to the plasma system of Taylor et al would show a change frequency from higher to lower for plasma initiation to plasma maintenance, as claimed.

In view of these considerations, Applicants submit that Claim 1 and the claims dependent therefrom patentably define over Taylor et al and Deguchi et al.

Regarding the art rejection of Claim 1 based on Tashiro et al, Tsuchiya et al, and Deguchi et al, as noted above, it is not clear which way the frequency matching in the single variable impedance matching network of Deguchi et al would change when applied to a condition for plasma initiation and then changed for plasma maintenance. Accordingly, the examiner has not established that the application of the single variable impedance matching network of Deguchi et al to the plasma system of Tashiro et al will meet all the claim elements. The essential point here is once again that there is no way to know that the combination of the single variable impedance matching network of Deguchi et al to the plasma system of Tashiro et al would show a change frequency from higher to lower for plasma initiation to plasma maintenance, as claimed.

Conclusion: Thus, for all these reasons, it is respectfully submitted that Claim 1 and the claims dependent therefrom patentably define over the art of record.

Consequently, in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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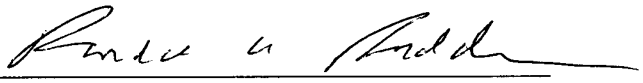

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